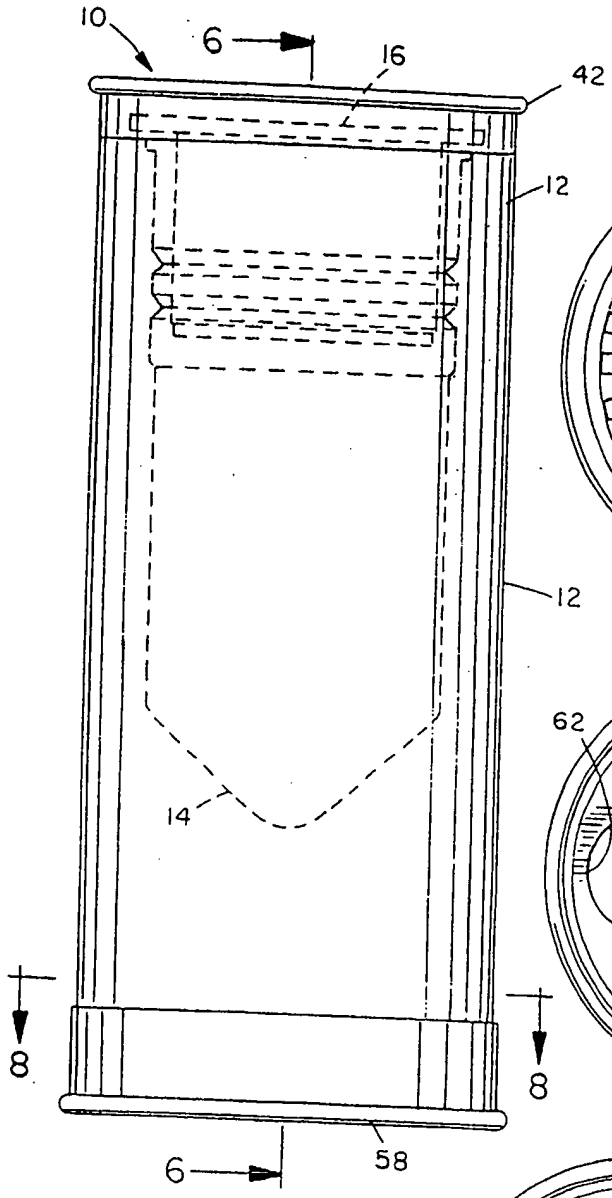

FIG. 1

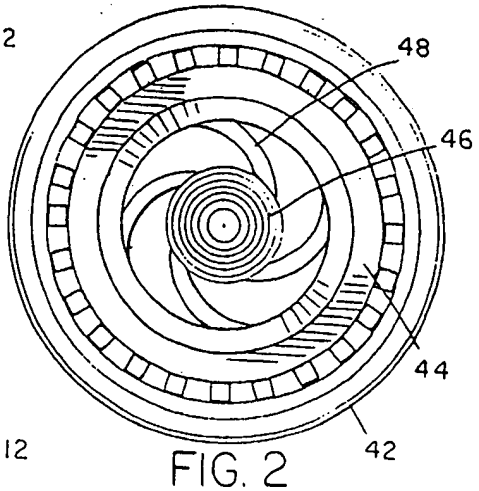

FIG. 2

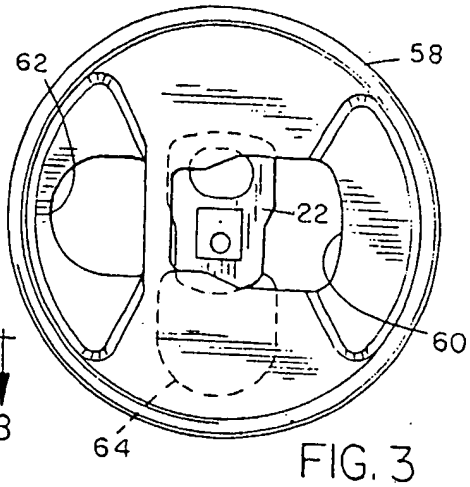

FIG. 3

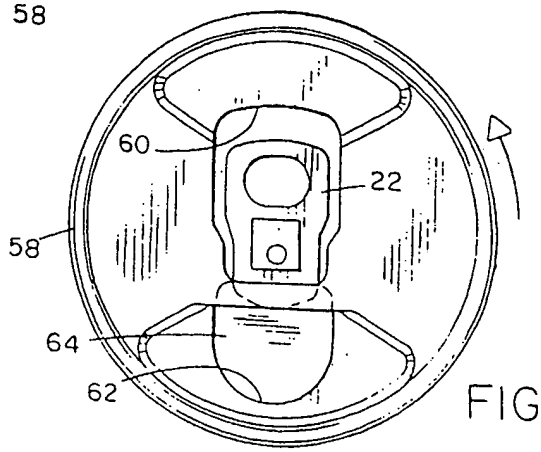

FIG. 4

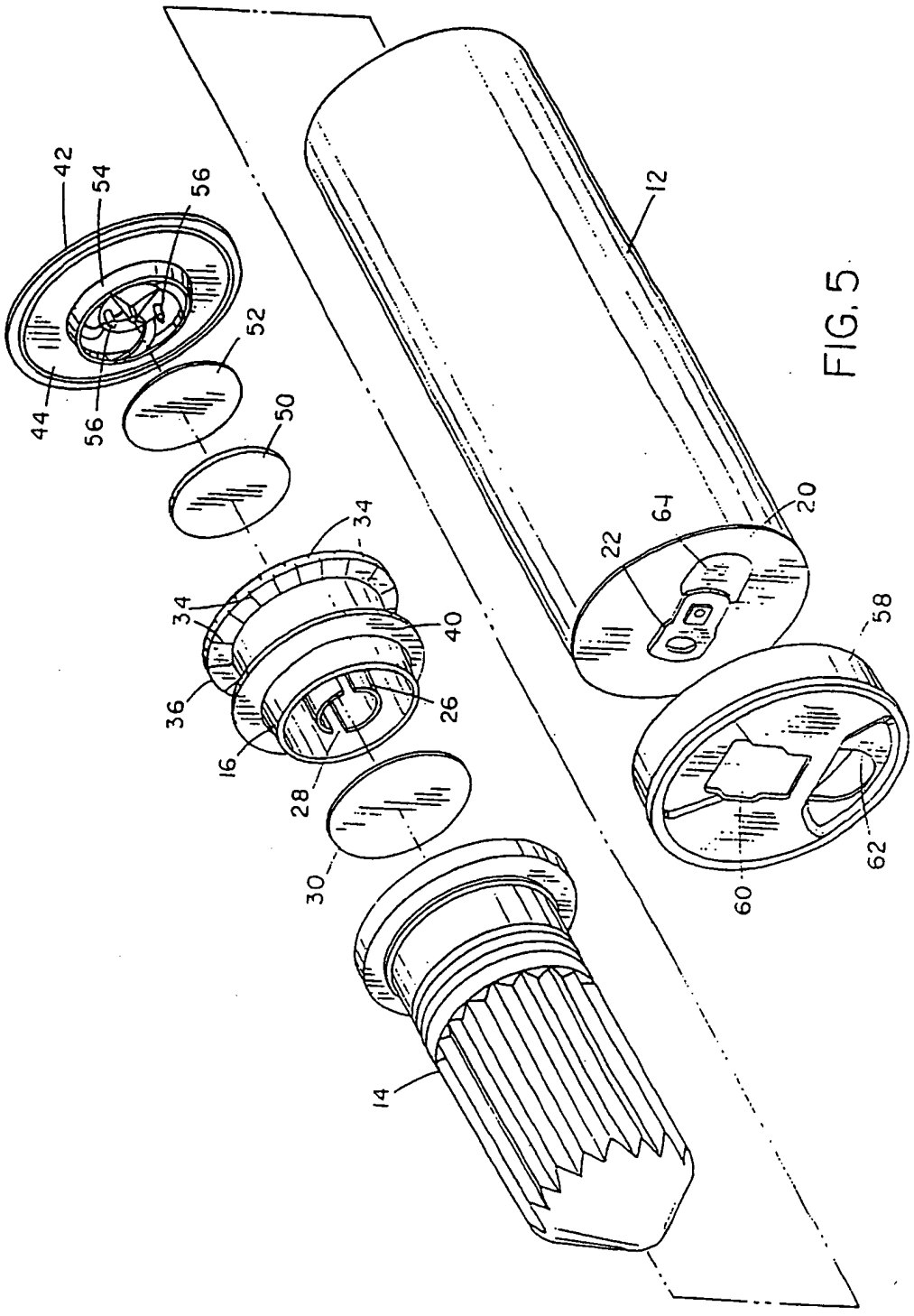

FIG. 5

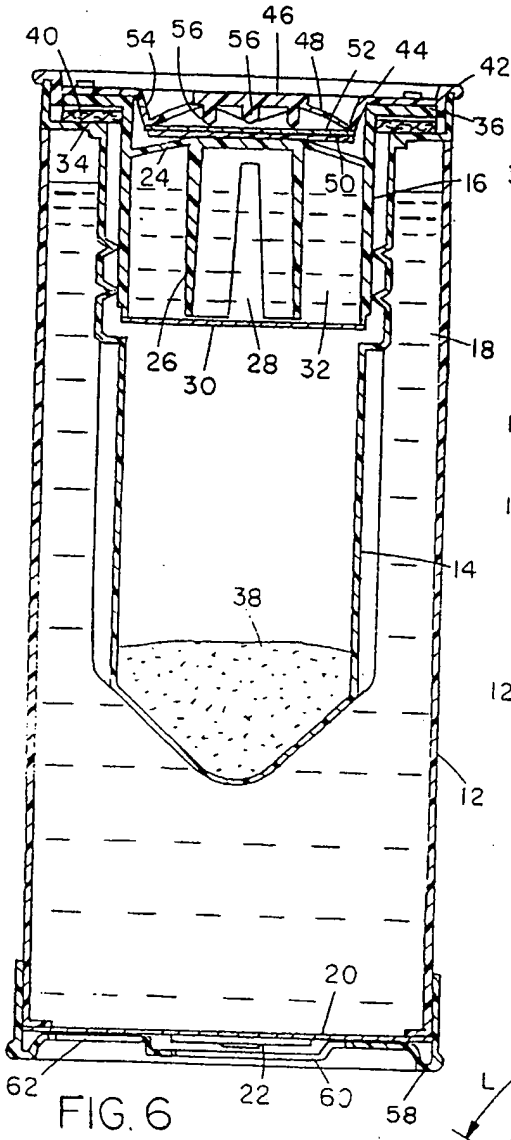

FIG. 6

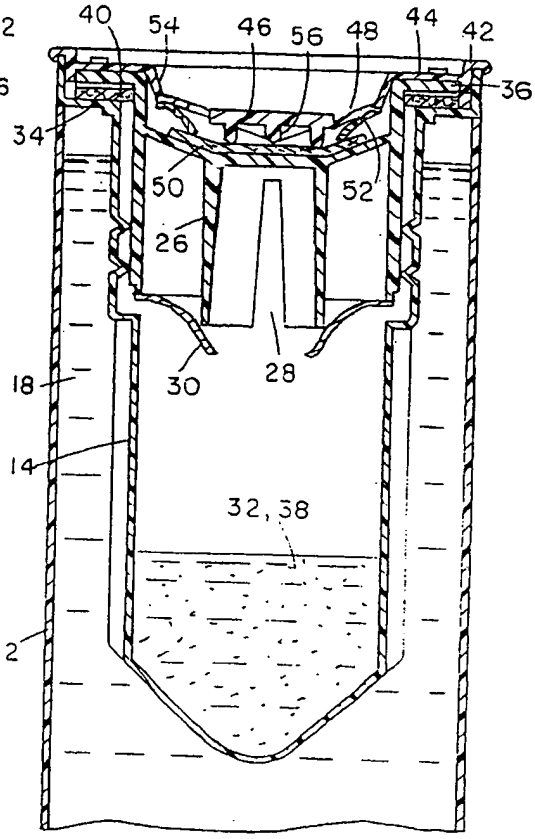

FIG. 7

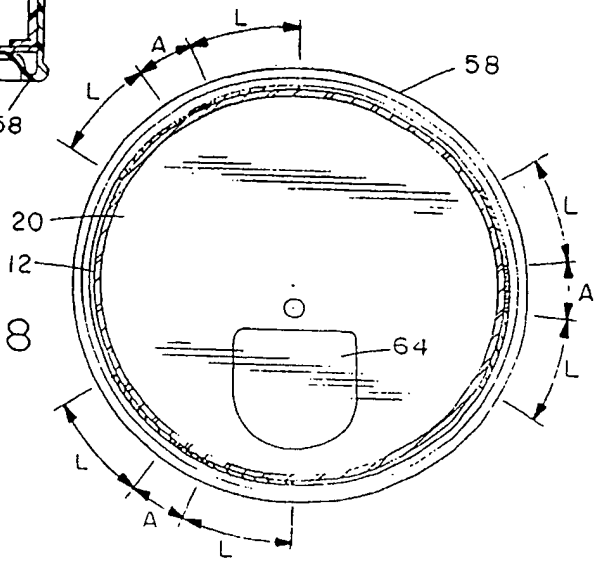

FIG. 8

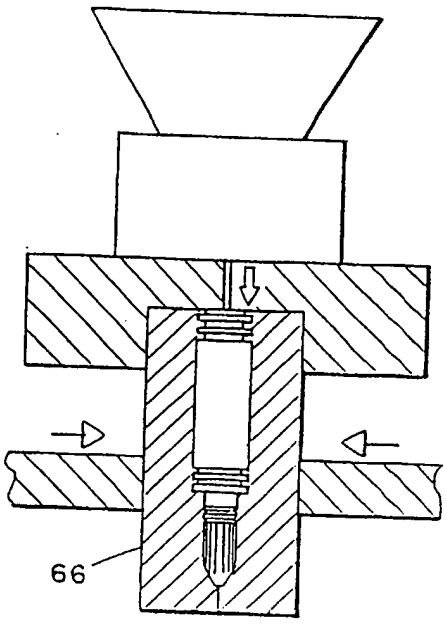

FIG. 9

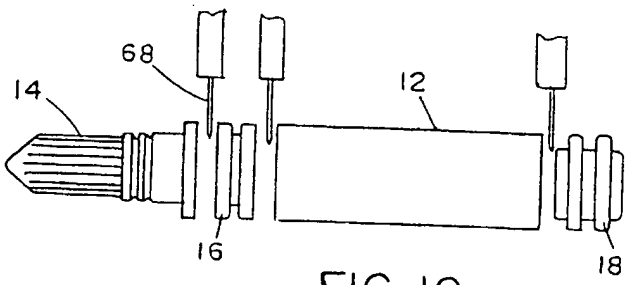

FIG. 10

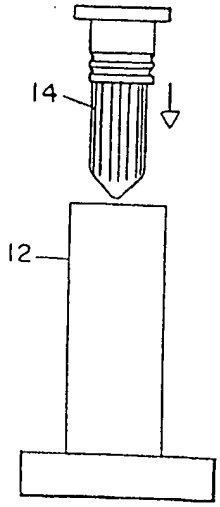

FIG. IIA

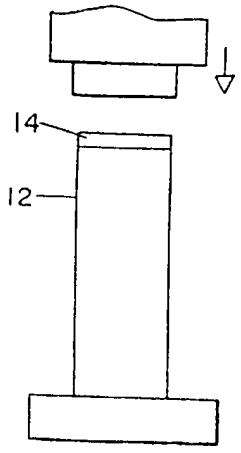

FIG. IIB

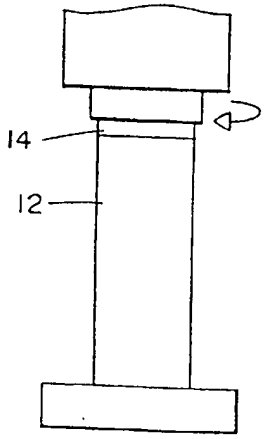

FIG. IIC

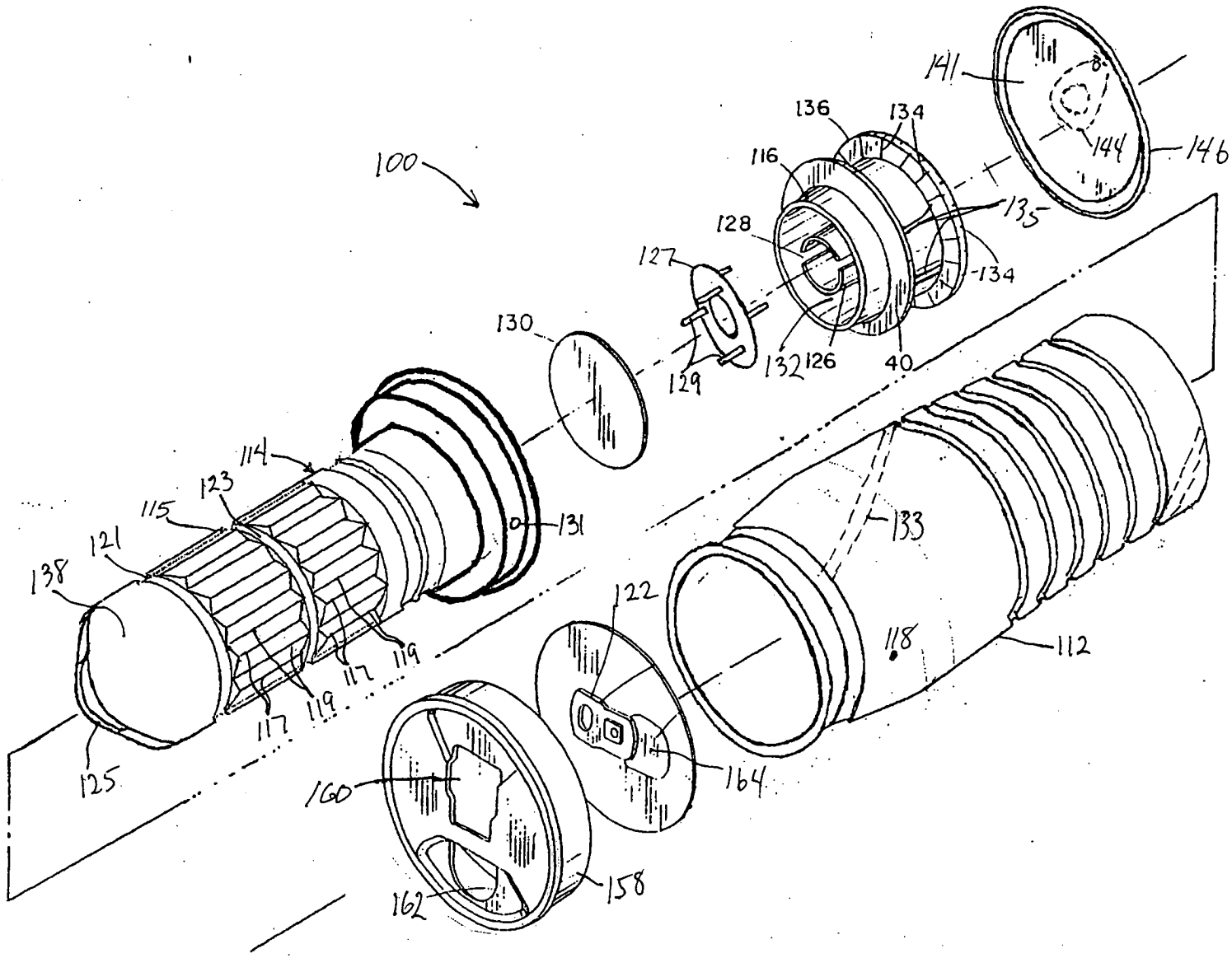
100
141
136
134
144
146
116
135
128
134
127
130
129
132
126
40
114
123
115
121
131
133
138
122
118
112
119
117
117
119
125
160
164
162
158

FIG. 12

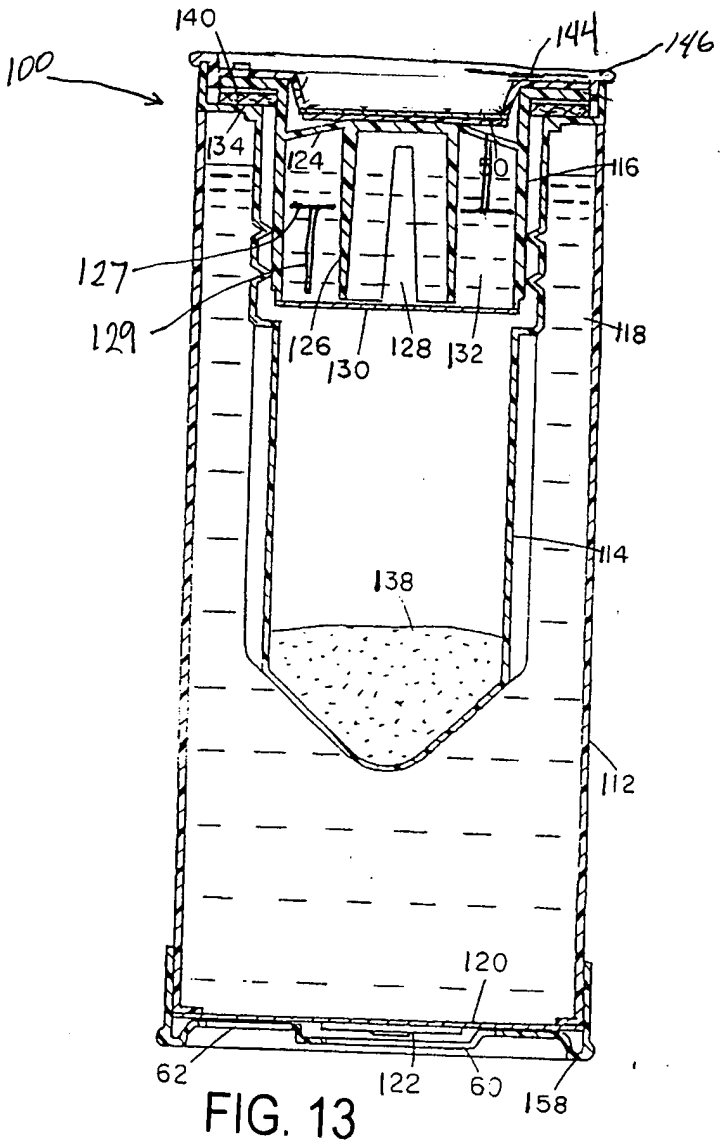
100
140
144
146
134
124
50
116
127
129
126
130
128
132
118
114
138
112
120
62
122
60
158

FIG. 13

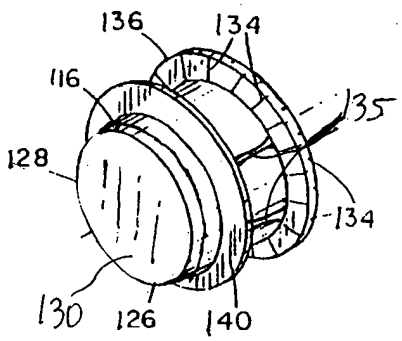
136
134
116
135
128
134
130
126
140

FIG. 14

FIG. 15

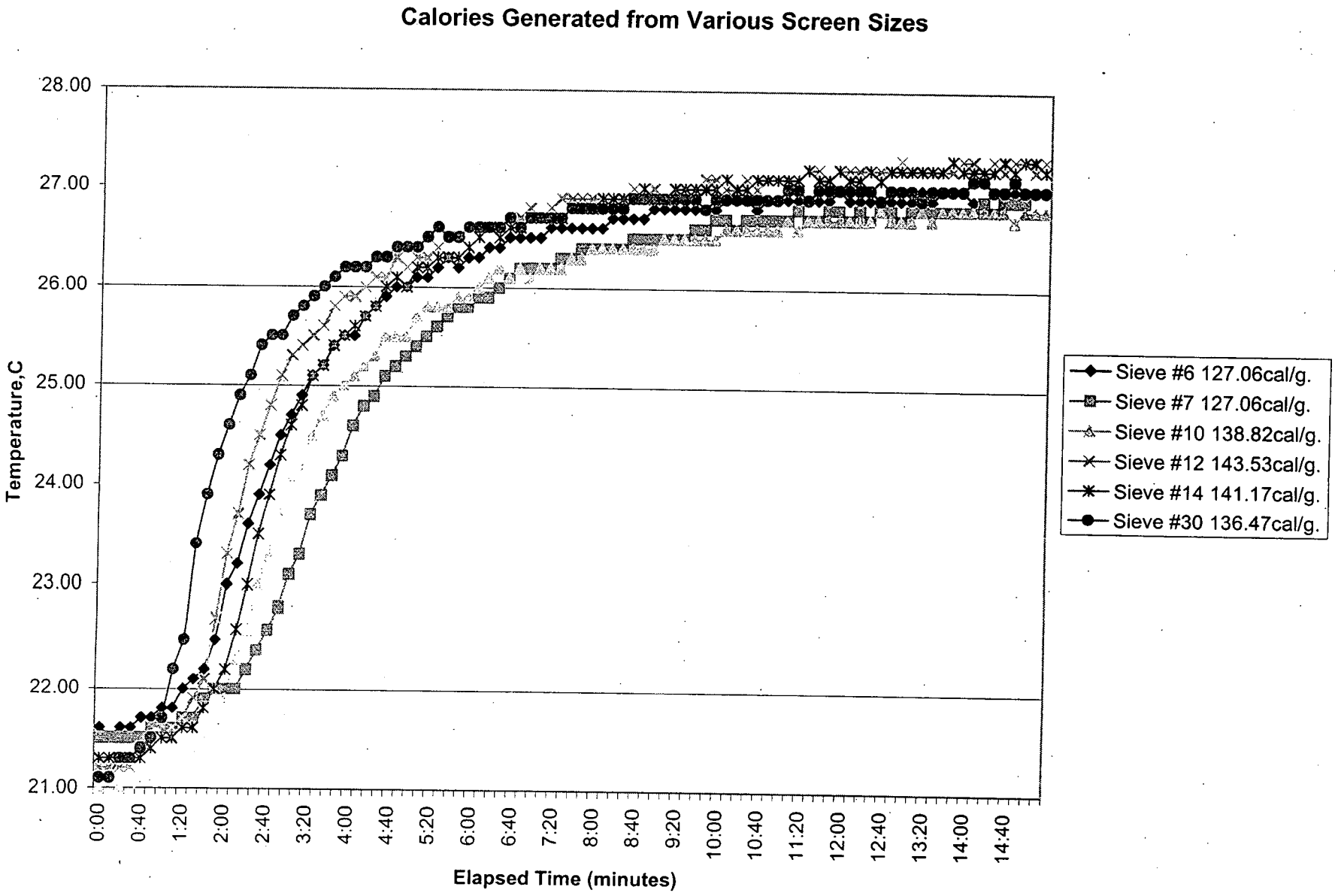
Calories Generated from Various Screen Sizes
28.00
27.00
26.00
25.00
24.00
23.00
22.00
21.00
Temperature,C
0:00
0:40
1:20
2:00
2:40
3:20
4:00
4:40
5:20
6:00
6:40
7:20
8:00
8:40
9:20
10:00
10:40
11:20
12:00
12:40
13:20
14:00
14:40
Elapsed Time (minutes)
Sieve #6 127.06cal/g.
Sieve #7 127.06cal/g.
Sieve #10 138.82cal/g.
Sieve #12 143.53cal/g.
Sieve #14 141.17cal/g.
Sieve #30 136.47cal/g.

FIG. 16

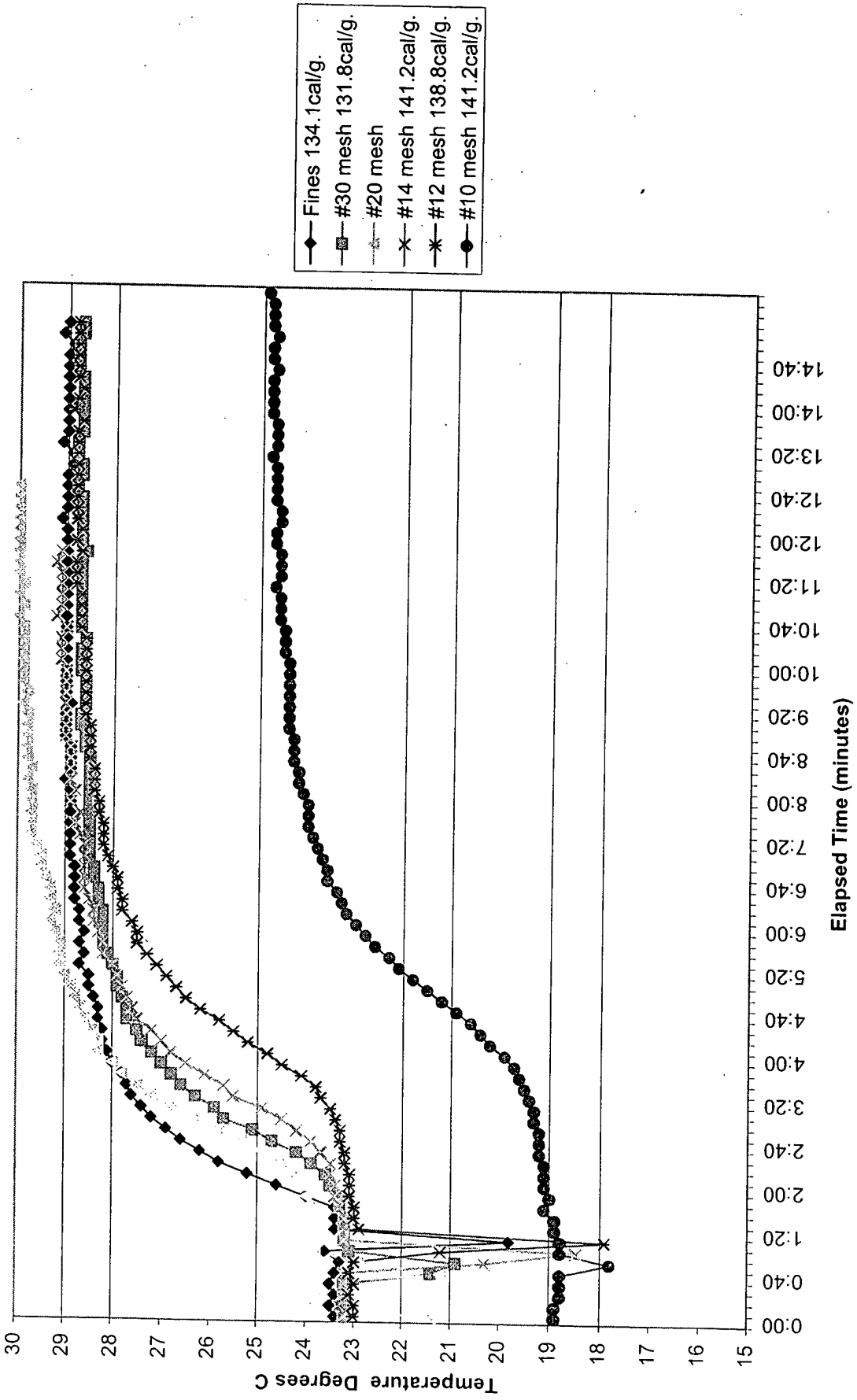
Calories Generated Per Particulate Size Sheet 1
Fines 134.1cal/g.
#30 mesh 131.8cal/g.
#20 mesh
#14 mesh 141.2cal/g.
#12 mesh 138.8cal/g.
#10 mesh 141.2cal/g.
Temperature Degrees C
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
Elapsed Time (minutes)
0:00
0:40
1:20
2:00
2:40
3:20
4:00
4:40
5:20
6:00
6:40
7:20
8:00
8:40
9:20
10:00
10:40
11:20
12:00
12:40
13:20
14:00
14:40

FIG. 17

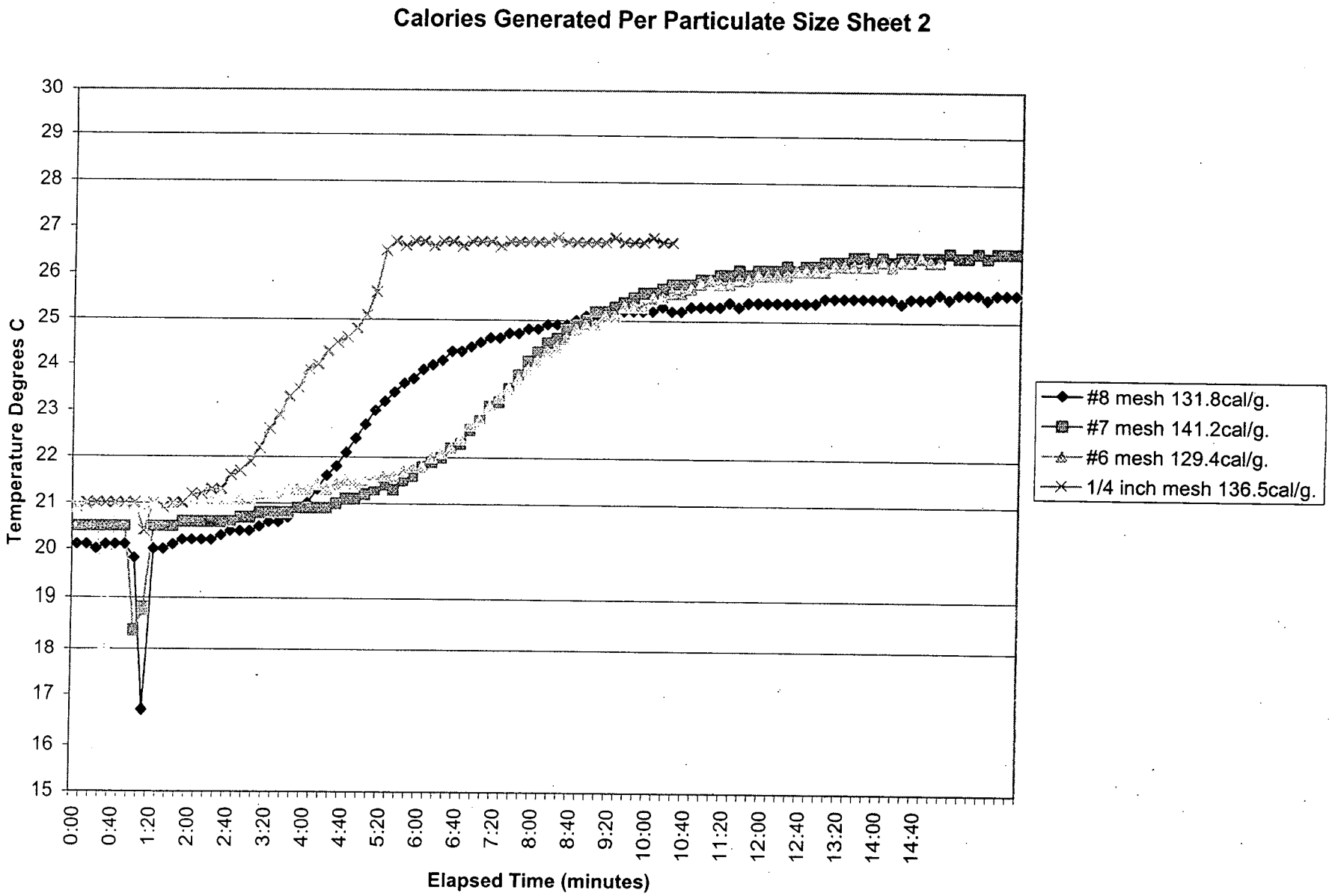
Calories Generated Per Particulate Size Sheet 2
Temperature Degrees C
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
0:00
0:40
1:20
2:00
2:40
3:20
4:00
4:40
5:20
6:00
6:40
7:20
8:00
8:40
9:20
10:00
10:40
11:20
12:00
12:40
13:20
14:00
14:40
Elapsed Time (minutes)
#8 mesh 131.8cal/g.
#7 mesh 141.2cal/g.
#6 mesh 129.4cal/g.
1/4 inch mesh 136.5cal/g.

FIG. 18

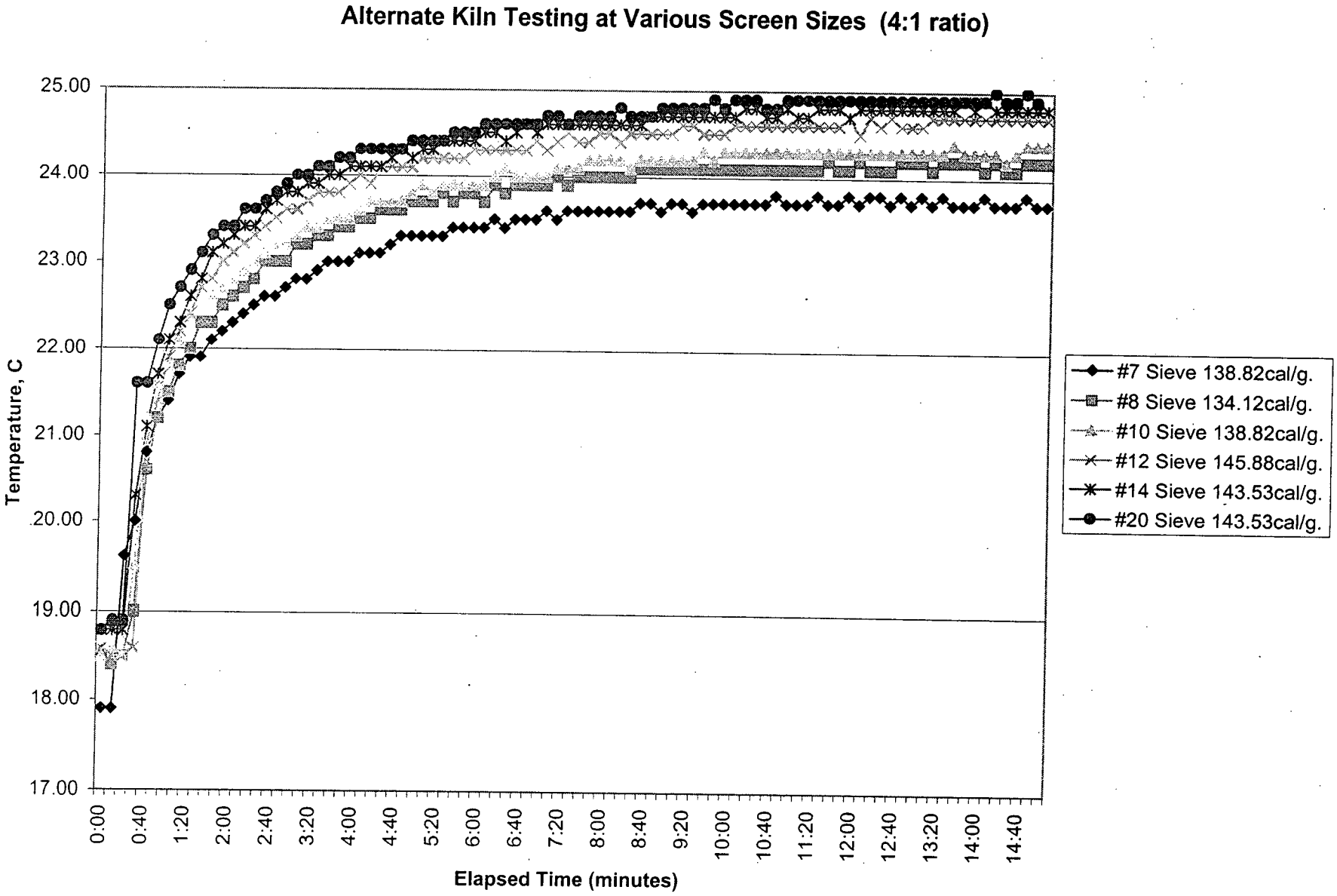
Alternate Kiln Testing at Various Screen Sizes (4:1 ratio)
Temperature, C
25.00
24.00
23.00
22.00
21.00
20.00
19.00
18.00
17.00
0:00
0:40
1:20
2:00
2:40
3:20
4:00
4:40
5:20
6:00
6:40
7:20
8:00
8:40
9:20
10:00
10:40
11:20
12:00
12:40
13:20
14:00
14:40
Elapsed Time (minutes)
#7 Sieve 138.82cal/g.
#8 Sieve 134.12cal/g.
#10 Sieve 138.82cal/g.
#12 Sieve 145.88cal/g.
#14 Sieve 143.53cal/g.
#20 Sieve 143.53cal/g.

FIG. 19

Calories Generated by Varied Water Amounts (4:1 is Baseline at 100%)

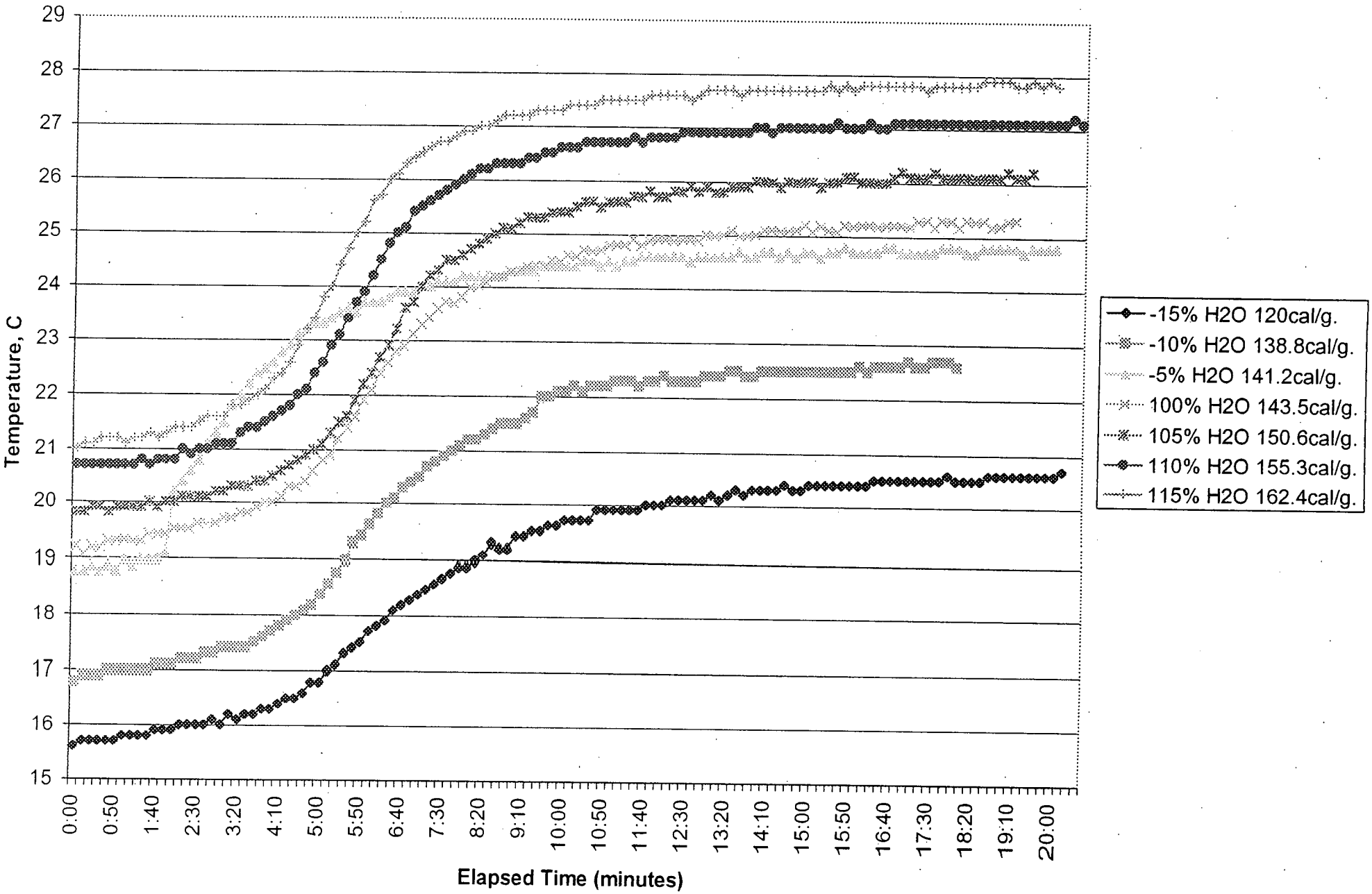

FIG. 20

Additional Calorie Generation with Increased Activation Water

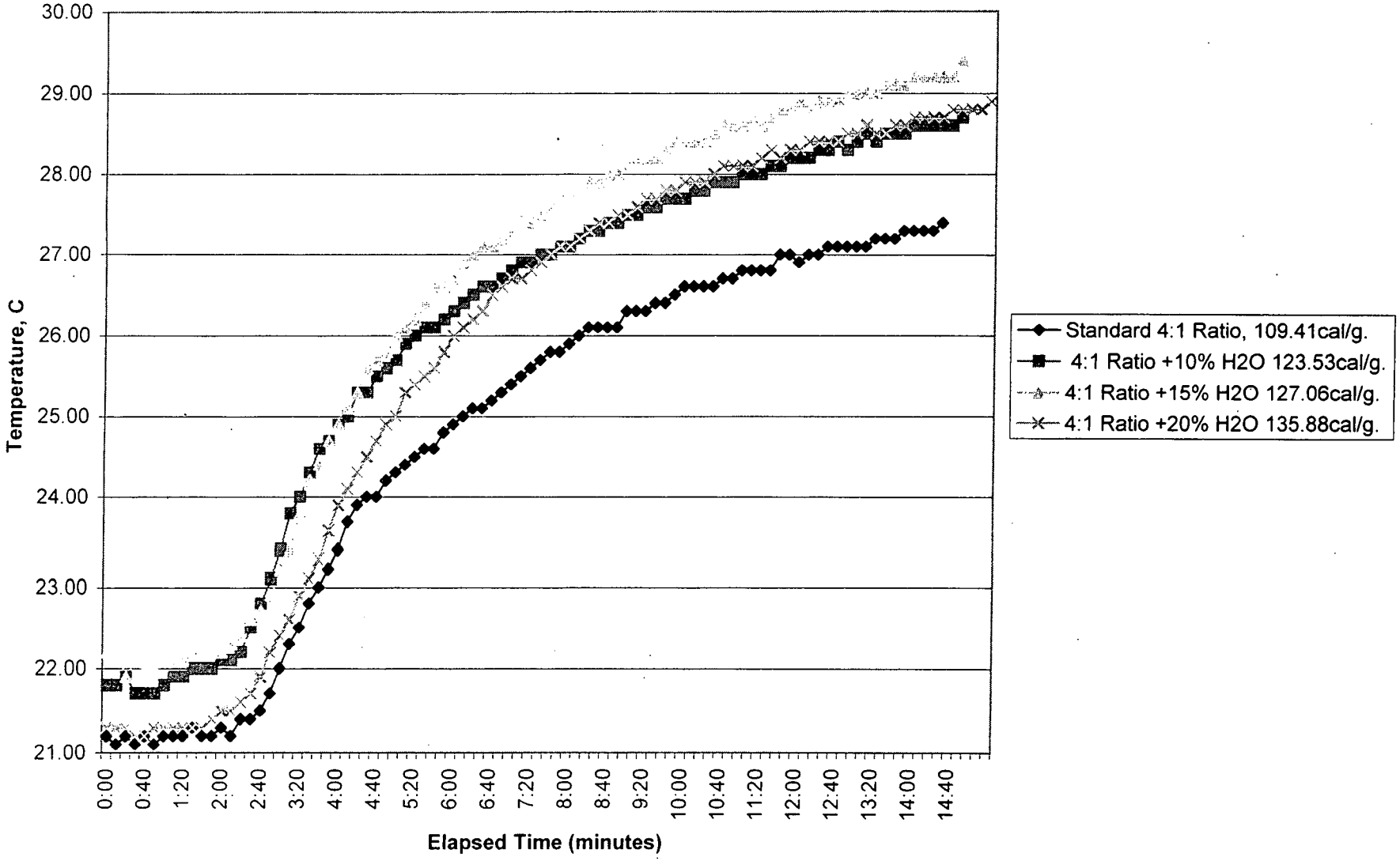

FIG. 21

Mineral components	Concentration (mg/L)
Bicarbonate	83.0
Chloride	11.7
Fluoride	ND
Nitrate	ND
Silica	28.0
Sulfate	3.4
Calcium	16.6
Magnesium	3.3
Potassium	1.3
Sodium	11.7
Total Dissolved Solids	130
Hardness	55.0
Heavy Metals	ND
Arsenic	ND
Trihalomethanes	ND
pH	7.04
Conductivity (μS)	250

(ND = Not Detectable)

Property

Additive	Molecular Formula	Molecular weight	Physical State	Appearance	Odor	pH	Vapor Density	Evaporation rate	MP	Solubility	Specific Gravity/ Density	Chemical Stability	Incompatibilities with Other Materials	Hazardous Decomposition Products
Sodium Benzoate	C7H5C2Na	144.02	Crystalline powder	white	Characteristic odor	~8	4.97	negligible	>300C	Soluble in water	1.44	Stable under normal temps and pressures	Strong oxidizing agents	CO, CO2, NaO
Fructose	C6(H2O)6	180.16g	white crystals	white	odorless				103-105C	Soluble in water		Stable under normal temps and pressures	Strong oxidizing agents	CO, CO2
Sucrose	C12H22O11	342.3g	Momoclinic sphenoidal crystals		Characteristic caramel	solutions are neutral to litmus			160-186C	1gm/0.5ml water	1.59	Stable under normal temps and pressures	Oxidizers, suluric acid, and nitric acid	CO, CO2
Citric Acid	C6H8O7	192.12g	white granules	white	odorless	2.2 (0.1N sol)			153C	60g/100ml at 20C	1.665	Stable under normal temps and pressures	Metal nitrates (explosive), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys	CO, CO2

FIG. 22